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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,213	07/31/2000	Chie-Chi Chen	TS2000-023	3986

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 11/21/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/629,213

Applicant(s)

CHEN ET AL.

Examiner

Michael Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicants' amendment dated 09/05/2002, Paper No.6 requires cancellation of claims 1-10 and amendment of claims 11-17, as per page 2. At the same time on page 6 of the instant amendment Applicants state that "claims **13, 15, 16, and 17** have been cancelled because the limitations have been moved to up into respective independent claims 11 and **15**. Independent claims 11 and **15** have been rewritten to include dependent claims **12-14** and **16** and **17** respectively". Applicants intention to cancel claims **13, 15, 16, 17** contradicts with presentation of amended claims 13, 15, 16, 17 and with request to reconsider previous rejections of claim 16 and claims 11-14.

Applicants attention also drawn to the fact that **Version with marking to show changes made**, as per pages 11-12 and 13 of the instant amendment, does not show all changes made in claims 15 and 17.

Nevertheless, claims 11-17 are examined in light of Applicants' amendment and remarks, presented on pages 2-8 of Paper No.6.

2. Applicants amendment has overcome objection to claim 17, rejection of claim 16 under 35 U.S.C. 112, second paragraph, rejection of claims 11-14 and 17 under 35 U.S.C. 102 (b) as anticipated by Stadler and rejection of claims 15 and 16 under 35 U.S.C. 103 (a) over Stadler.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12, 13, 16, 17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Dependent claims 12, 13, 16, 17 recite **the method** according to respective independent claims 11 or 15 **"further comprising the steps of:"**. However, the "further steps" are not disclosed. Instead of providing these processing steps, claims 12,13,16,17 describe the limitation of apparatus. Therefore, the skilled artisan will not be able to practice the recited method as per claims 12,13,16,17 without undue experimentation.

4. The text of those sections of Title 35, U.S.Code not included in this action can be found in a prior Office action.

5. Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited in claim 11 "a liquid chemical will all surfaces of said substrates" constitutes an indefinite subject matter as per metes and bounds of such are not readily ascertainable. Clarification/correction is required.

For examination purposes it is assumed that a liquid chemical will **contact** all surfaces of said substrates.

The recited in claim 14 the phrase "such as" renders the claim indefinite because

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it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The recited in claim 14 "said method is cost effective compared with commercial megasonic or mechanical vibratory methods" constitutes an indefinite subject matter, because the cost comparison between the instantly claimed invention and stated commercial methods is not provided, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the instant claim 14.

6. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Advocate, Jr. et al. (U.S. 5,904,156) in view of Aigo (U.S. 5,014,727).

Advocate teaches a method of removal a film of photoresist, which can be utilized in semiconductor technology and particularly for the removing of photoresist from the vicinity of C4 structures, consisting of silicon device, interposed by a metal stack (col.1, lines 5-13; col.2, lines 65-67; col.6, lines 27-30). The method of Advocate comprises providing a strip tank with stripping solution, providing a false bottom with gas fan (compare to gas distribution plate, as instantly claimed), providing pressurized and flow regulated tube for the supply of inert gas (compare to pressure regulated gas supply means, as instantly claimed) to gas fan, providing a wafer boat (compare to carrier means) for placement wafers in a vertical position, immersing a wafer boat into stripping solution and positioning it onto the false bottom and generating the pressurized gas flow, which causes aggressive bubbling in the solution around the wafers. Advocate

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specifically indicates, that during processing the numerous gas bubbles travel vertically between the wafers and gently scrub the wafer surface (col.8, lines 59-67; col. 9, lines 6-31, lines 41-44; Fig.1). The tubing and other equipment parts in the method of Advocate are made of stainless steel (col.9, lines 22-23).

The teaching of Advocate differs from the instantly claimed subject matter by not specifying quartz as the material for gas distribution means. However, quartz is notoriously used as the construction material for making parts for semiconductor wet processing equipment and, specifically bubbling devices, as provided by Aigo (col.1, lines 28-34). Therefore, the skilled artisan motivated by the teaching of Aigo would have found it obvious to utilize quartz for making gas distributing means in lieu of stainless steel part of Advocate in order to enhance control over the stripping process of Advocate by providing transparent gas distributing means in Advocate's strip tank.

While teaching gas distributing means comprising a false bottom (compare to a top surface, as instantly claimed) and gas fan (compare to a bottom surface, as instantly claimed), separated from each other and a plurality of elongated slots openings (Fig.2), the teaching of Advocate remains silent about the particularities of employed equipment, as per instant claims 12,13,16. However, the structural limitations of apparatus in process claims which are otherwise met by the applied reference, are not given a significant patentable weight, unless these structural features present a manipulative difference in a process steps. In the instant case the structural limitations of gas supply and distributing means does not present a manipulative difference, since the steps of the process as instantly claimed are performed without any connection to

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the design of gas supply and distributing means, which is reflected in rejection under 35 U.S.C. 112, first paragraph, provided above. Applicants' attention is drawn to the fact, that if the operation is known in reference to the object, the invention of a new machine for performing it does not make a new process, but only a new instrument for applying it, consult *In re Tarezy-Hornoch*, 158 USPQ 141 (CCPA 1968).

7. Applicants should note that additional prior art cited in PTOL-892 shows general state of the art.

Response to Arguments

8. Applicant's arguments with respect to claims 11-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

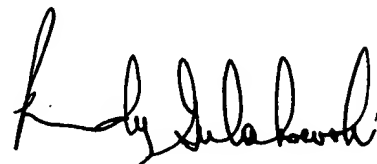
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (703) 305-0400. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872 9310 for regular communications and (703) 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 2450.

Michael Kornakov
Examiner
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MK
November 14, 2002



RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

